

Thus, insertion stop location **26e** is illustrated as coinciding with the beginning of flare **18**, in FIG. 3. In similar embodiments in which the sheathed catheter assembly has no free end, or substantially no free end, the sheath attachment point essentially coincides with end **32** of catheter **10**, or it may be merely 1 mm to a few millimeters back from the outlet **32**. For instance, a free end **36e** of only about 2 mm is adequate in many situations of use to facilitate urine collection in a conventional disposable tray, and to facilitate catching a sterile urine specimen in a conventional specimen container. When there is no free end, the sheath attachment point preferably serves the above-described purpose of resting stably on the urine receptacle while the bladder drains, or it provides a convenient grasping area for attaching the outlet **34** to a collection bag, or for cooperating with another urine disposal means. To facilitate those purposes, a tapered sheath may be preferred.

[0038] A feature of many of the above-described variations of the sheathed catheter assembly, is that, regardless of the chosen configuration of the catheter tip end of the assembly, at least the urethra-insertable portion of the catheter is covered, to prevent contamination and urinary tract infections. In some variations, the catheter tip end of the assembly initially protrudes from the sheath, to facilitate application of a lubricant gel. An advantageous feature of each embodiment of the catheter assembly is that the sheath does not extend beyond the urine outlet end **32** of the catheter **10**, leaving end **32** free to allow urine to drain out into the tray for accurate measurement and/or to drain into a urine collection container. This configuration ensures that no urine will enter the sheath interior or lumen, and that urine and other possible contaminants cannot contact the insertable portion of the catheter. Preferably a lubricant, such as K-Y Jelly™ or a wetting agent is contained inside the sheath and/or in a catheter tip cover, or the like, if provided. The sheath/catheter attachment advantageously prevents the lubricant or wetting agent from mixing with the urine and possibly skewing urinalysis results.

[0039] In FIG. 4, a modified version of the assembly of FIG. 3 is shown, comprising catheter **10** with outlet **34** and insertion stop location **26f**, and sheath **40f** having lumen **41f**. In this configuration, the assembly **1c** also includes an extension or pour spout **60**, with urine outlet **62**, to facilitate obtaining a sterile urine specimen from the catheter outlet **34**. Extension **60** may be formed together with closure or band **50f**, or it may be provided separately and snapped over band **50f** and held in place by friction fit, or other suitable attachment method. Free end **36f** is outside sheath **40f**, but is enclosed in extension **60**. In some situations, extension **60** may be preferred for resting on the edge of the collection container to drain the exiting urine.

[0040] Referring now to FIG. 5A, another embodiment of the sheathed catheter assembly includes an attached urine collection receptacle. The urine receptacle or bag is preferably made of a flexible, water-proof material (e.g., plastic) and is sized to hold a volume of urine in the range of 700-2000 mL, preferably about 1000 mL. The urethra-contacting end of the assembly may be of any suitable configuration. Free end **36g** of catheter **10** is similar to any of those illustrated in FIGS. 1A-C and 3, and described above. In representative assembly **1g** in FIG. 5A, bag **90** has a terminus **92g** which is attached to catheter **10** at bag attachment point **13g**, which, in this instance, substantially

coincides with attachment point **12g** (of sheath **40g**) on catheter **10**. A collar or band **50g** may be included to secure the water-tight attachment of sheath **40g**, collection bag **90** and catheter **10**. In this assembly, the free end **36g**, having a urine outlet **34**, is inside the lumen **94g** of urine receptacle **90g**. Lumen **94g** is not in fluid communication with lumen **41g** of sheath **40g**.

[0041] The design of assembly **1g** in FIG. 5A may be varied somewhat, as shown in FIG. 5B. Assembly **1h** is configured so that a portion of the free end is not enclosed in urine collection bag **90h**. In this embodiment, section **38h** of free end **36h** is exposed (i.e., not enclosed in either sheath **40h** or bag **90h**), to facilitate manipulation of the free end and of the urine collection bag **90h**. Accordingly, bag attachment point **13h** is spaced apart from attachment point **12h** on catheter **10**. Still another representative catheter assembly **1i**, with attached urine collection bag **90i**, is shown in FIG. 5C. A drainage tube **100i** is attached at end **102i** to bag **90i** at drainage port **96i**, which is spaced apart from catheter outlet **34**. Outlet end **104i** of tube **100i** is releasably retained in holder **98i** on bag **90i**, to maintain sterility of end **104i**. A closure **106i** is attached to tube **100i** between ends **102i**, **104i** and is capable of being operated to either prevent or permit urine flow from lumen **94i** bag **90i** to outlet end **104i**.

Catheterization Kit

[0042] As shown in FIG. 6, a representative catheterization kit ("cath kit") **70** that is particularly useful for hospital inpatient catheterizations includes a sheathed catheter assembly **72**, representative of those described above and shown as **1a-f** of FIGS. 1-4. For example, sheathed catheter assembly **72** may include an introducer **77**, catheter **73**, and sheath **75** attached at one end **76** to the catheter and at the opposite end to the introducer **77**, if present. The free end **74** of catheter **73** is not covered by sheath **75**. In addition to the sheathed catheter assembly, the kit preferably also contains a packet of antiseptic swabs **79** (e.g., three swabs saturated with Betadine, Povidone-Iodine or other suitable antiseptic), disposable gloves **80**, small urine specimen bottle (with cap) **78**, and a tray **71** that holds these supplies and also serves as a urine collection container and has a capacity in the range of 700-2000 mL, preferably about 1000 mL. Preferably a fenestrated drape is also included in the kit. A gauze pad may also be included in the kit as a convenient wipe at the end of the procedure. The kit components are protected by a sanitary wrapper or cover **82**. All kit components are preferably disposable.

[0043] Notably absent from the present kit, however, are the customary liquid antiseptic packet, cotton balls, tray for cotton balls, forceps, and packet containing lubricating jelly. In some embodiments, the fenestrated drape is also omitted from the kit without compromising sterile technique. The conventional waterproof absorbent pad is also unnecessary, as it was often included in the past primarily to provide a sterile field for placement of the sterile jelly. Preferably, the lubricant is provided within the catheter assembly. For example, a lubricating amount of sterile lubricant may be present inside the sheath lumen, or inside an introducer (FIG. 1C). Alternatively, the catheter may be a lubricated hydrophilic type as is known in the art, in which case the lumen and/or an introducer of the catheter assembly may contain an aqueous wetting agent. A drawback of conven-